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MACDONALD COLLEGE

SEPTEMBER 23, 24, 25, 1976

THE macdonald JOURNAL

AUGUST 1976

Macdonald Journal
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Journal Jottings

In his Convocation Address, which is published in this issue, the recipient of an honorary degree, Mr. Glenn Downing, discussed energy, agriculture, and food. I had the opportunity recently to observe the marked difference between the word "energy" as used in today's agriculture and that of yesteryear's. It was at an Open Farm Day (see the cover and photostory in this issue), where, among other events, various farm and household chores past and present were carried out. Where did most of the "energy" come from for such things as mowing, milking, and churning in days gone by? It was horse power, man power and woman power. The energy came from backs, legs, arms, and shoulders and was generated by strength, muscle, determination, and sweat.

It was a wonderful day for photography, and the staff from Macdonald — Joan Habel (under the canopy), Marilyn and André Virly, Marina Costain, her son Robert, and Jim Feeny (not in photo) — energetically set to with cameras and film to capture the mood of the day.

The cover, layout, photos, and copy are our combined effort and our way of saying "thanks for a fun day."

Hazel M. Clarke

Editorial

The very successful field day in Richmond County last June represents, I think, what local people can accomplish with a little bit of interest, cooperation, and planning. It was a group effort that the people of Richmond QFA undertook on their own, without the outside money and government assistance that so many of us feel are necessary to do anything at all these days. These people put across an excellent field day because they wanted to and because they felt it was important. Congratulations!

They chose a particularly appropriate objective of trying to create an opportunity whereby urban people could begin to gain an understanding of farming and agriculture. In this time of rising prices, consumerism, and world food imbalances, it's becoming more apparent that farmers and consumers are very much dependent upon one another. This interdependence has in some cases led to competition between farmers and consumers, and between farm prices and food prices, as each side has been pushing harder for their own particular welfare or point of view. The outgrowth of this in some cases resulted in misunderstanding, misinterpretations, differences, and hard feelings.

When these differences surface, it is important that an opportunity be made available for the two groups to get together and begin to try to understood the other's viewpoint and position. Immediate agreement is not likely to be the outcome of these initial encounters, but at least there is a chance for an understanding to develop. And this understanding is a necessary prerequisite to the co-operation and consensus that I think all of us would like to see.

I am sure that there are many other types of community projects that your local group or community could undertake that could bring together different people or groups in your community. Perhaps your group could organize a combination historical and agricultural tour of your county. This might bring the farm and nonfarm community together on something of common interest. Or perhaps some people may want to organize a community festival complete with local talent contests, community exhibits, farmhand competitions, etc. Maybe someone might like a gardening competition between farm and city families concluded with a local fair exhibition. Or it could be just anything that you would like to see happen.

The important thing is that, regardless of the specific project chosen, people have enough interest and concern in their community and agriculture to want to do something on their own. It means making a few sacrifices and giving up some free time, but the benefits to you personally and to your community will be well worth the effort. This type of activity can give a person a sense of achievement, personal satisfaction, and pride in his community. This is something I am sure the people of Richmond will agree upon and be happy to share their views with you.

Gordon Bachman.

Macdonald Reports

CONVOCATION, MAY 29, 1976

Honorary Degree

Mr. Chancellor, it is my honour and privilege to present to you, and to this Convocation, Charles Glenn Downing, Director of Agricultural Engineering, Agriculture Canada.

A native of the dry lands of western Saskatchewan, Glenn Downing earned the Bachelor of Engineering Degree from the University of Saskatchewan and a Master of Science Degree from Iowa State University.

As an Agricultural Engineer at the Dominion Experimental Station, Swift Current, Saskatchewan, Mr. Downing was involved in early work on mechanization of tillage and harvesting of wheat after the dust bowl days of the 1930s. After four years service in the Canadian Army, he returned to Canada.

In 1946, Glenn Downing began his career in education as Professor and Head of the Agricultural Engineering Department, Ontario Agricultural College, Guelph. During his tenure of 21 years, he was able, through recruitment of new staff and active support of their work, to improve the degree program to one which awarded professional engineering standing. He developed post-graduate training and increased the research productivity from very little to one of leadership in Canada. He founded the Agricultural Engineering Extension Service which has become a model for many others. The establishment of the School of Engineering within the O.A.C. and the completion of plans for the present new building to house the School, capped his efforts at Guelph.

Glenn Downing has long encouraged Federal-Provincial programs by his active participation. One of the first such projects was the Canadian Farm Plan Service which in the beginning was a joint undertaking between Professor Angus Banting at Macdonald College, the Central Experimental Farm in Ottawa and Professor Downing. The service has been a key in the development of housing for confined livestock and the resultant increase in efficiency of production. He proposed, and successfully implemented recently, a major program in agricultural mechanization by obtaining $1,000,000 per year for research and development in university agricultural engineering departments, provincial institutions, and small industries. This stimulus to research is a major portion of the current contribution of Agriculture Canada for all agricultural research in Canada.

Mr. Downing assisted Chile, South Africa, and India with their problems of university education in agricultural engineering and storage and harvesting of food crops. Most recently, he made a round-the-world tour to study and report on international rice research.

Glenn Downing has been very active in societies concerned with research, the agriculture and engineering professions, and education. He is a Charter member of the Canadian Society of Agricultural Engineering and served not only as its president, but as long-time editor of the C.S.A.E. Journal.

Mr. Chancellor, may I present, so that you may confer upon him the Degree of Doctorate of Science *honoris causa,* this Fellow of the Engineering Institute of Canada, Fellow of the American Society of Agricultural Engineers, Fellow of the Canadian Society of Agricultural Engineering, author of more than 20 papers in scientific journals and international conferences, distinguished agricultural engineer, Charles Glenn Downing.

J. R. Ogilvie
Department of Agricultural Engineering

Convocation Address

by C. G. E. Downing

Mr. Chancellor, honoured guests, fellow graduates, families and friends. I feel doubly honoured this day, first in having this high honour of Doctor of Science bestowed upon me by this very illustrious university. I am very much aware of its great stature through my many contacts with it during the past 30 years, and of course my daughter, being a graduate, reminds me of this also periodically. Second, I consider it a great privilege and honour to speak for, and to speak to, the graduates this day.

As a graduate, I feel I have missed a great deal by not being able to attend classes with the other graduates, but trust that they have learned well and expended sufficient energy that they might carry me on their shoulders. Therefore, on behalf of all of us, I would like to extend sincere appreciation to McGill University through you, Mr. Chancellor, and to Macdonald College, through you, Mr. Dean, for the opportunity of learning and achievement that has been afforded us, and for the high standard you have set for our performance. I trust that we will ever by worthy of this high calling and will extend to our fellow man the benefits of that which we have received from those who have given so liberally of their time and knowledge to us.

Energy — Agriculture — Food

Agriculture today sits like a great walnut between the arms of a

nutcracker. The energy arm forcing inward on one side to conserve energy used by it and the hungry world arm squeezing on the other side to produce more food for its needs. All who are associated with these areas of our society and economy are going to be under great stress as we move into the future, not only to be able to live the good life, as we have come to know it, but also in no small way, to be our brother's keeper.

We have all learned as we have studied and obtained knowledge about energy, that indeed it is the basis for all creation. The breaking of the atom ushered in a whole new technology. We now understand that it is the internal energy of matter that holds buildings and bridges in place, if properly designed, of course, by an engineer. It is also this same type of internal energy that gives mobile machines their action. In fact, it is energy that makes the world go round. Now to young people, poets, and the writers of songs, this may be a sad blow in that it appears in their language it is love that makes the world go round. My experience, as a young person, would indicate that that statement was not untrue. I believe even the great poets had some appreciation of energy, even though they wrote mostly poems of love. Take the great poet, Robert Browning, when he said in one of his poems, "A man's reach must exceed his grasp, or what is heaven for?". I trust that all of us who are graduating this day will keep this as a basic and energizing concept of life. I hope we will not just grasp our diplomas today and spend all of our energy spinning our wheels just hanging on to that which we have attained.

I am sure that some are already reaching for further knowledge through the post-graduate channels of this and other universities, and that others are reaching out in the business world to climb the ladder of success. The best I can advise is don't reach too far unless you have a firm grasp or stand on a solid foundation. Today you receive acknowledgement of standing on one such foundation.

As we look at agriculture in today's place in the sun, we find it is one of three broad industrial segments of society which is net energy-productive. This means that it produces more energy than it consumes in the process. This is true at least to the farm gate, and to this extent, agriculture utilizes only about 2½-3 per cent of the total energy consumed in Canada. However, before that which agriculture produces becomes food on the home plate, is a different story. The processing of food after it leaves the farm gate requires twice the amount of energy utilized in producing it. An equal amount is utilized in the wholesaling, retailing, and transportation of the food from the farm to the home plate and again almost twice the amount of energy is used in cooking and freezing and all the other things the good wife does before the food is on the plate. In total then, our food production system requires about 14 per cent of the total energy that is consumed in Canada. Therefore we must look beyond the farm gate as well as on the farm to look for areas for conservation of energy in the food system.

The second energy-productive area of the economy is the forest area which produces approximately the same amount of biomass for utilization in the form of wood and wood products as agriculture does in the form of feed and food, and has about an equivalent amount of waste products that might be used directly as a supplemental energy source.

The third area, of course, is the basic energy-producing segment itself which includes the oil, coal, and electrical energy resource areas. The one we are at present most concerned about in agriculture is the oil industry. It appears that it takes about 17 per cent of the energy value of the oil produced to get it from the original source to areas in Canada where it is utilized. Looking to future oil supply areas, it is quite evident that this could increase to 50 per cent of the energy value of the oil in the more difficult to obtain areas, such as the tar sands of western Canada, under the ice in the North and under the water in the open seas. Thus in addition to the extra costs that will obviously be involved, the net quantity of this resource is going to be less than that from the more traditional oil areas.

Agriculture's paradox, then, is a demand for more food to feed a hungry world, faced with the pressure to produce with less more costly energy, one of the major cost elements in production.

Many people are asking, what is the potential to increase food production in Canada. I believe a reasonable prediction can be made here, without it appearing to be government policy, that could be a possible potential of agricultural production by the year 2000 A.D. Based on present production and recent land evaluation potential and assuming that the Canadian population will increase to 30-35 million by that time, assuming also that fruit and vegetable crop production will likely remain constant, that dairy production will increase at about half the rate of population increase, and that beef, pork, and poultry will increase at about the same rate as population, it is estimated that Canada could double the production of cereal and oilseed crops. Predicting in-

crease in this area of production is based on three factors. First, this is a basic philosophy which is nutritionally sound, that wheat is for man, barley and corn for livestock, oats are for horses, and meat should be eaten sparingly and in season.

Second, the real demand in the world's hungry population is for cereal grain, and third, it is the least energy-intensive of all the crops to produce and is the backbone of Canadian export trade. In fact, the agripower of Canada more than meets the petro-power of the OPEC countries and this could be even more significant in the future as we look at Canada's need for oil.

It is estimated that this increased production could be obtained with an increase of energy of only 50 per cent of the present use without any special conservation practices. This could be reduced to about 25 per cent increase with energy conservation techniques applied in all areas of the agriculture food system.

The vital task ahead is one in which engineers, agronomists, and economists must provide improvements in the efficiency and conservation techniques for short term gains, so that long term achievements can be attained by biologists, physicists, and other fundamental scientists. The fertilizer manufacturer, the chemical manufacturer, the farm machinery manufacturer, the food processor, are all being called on at this time to reduce their energy input per unit of production by 25 per cent within the next 15 years, the farmer is going to be called upon to achieve a 15 per cent saving in energy, and research establishments and universities are going to be called upon to develop renewable energy resources, such as wind, solar and biomass, and strive to improve the basic photosynthetic efficiency in crop production.

Great are the challenges and opportunities for graduates in this energy-conscious environment into which we have been thrust in very recent years, particularly as it relates to agriculture and food production.

The engineer and physical scientist have great opportunity in the the development of more machines and in the study and utilization of all basic sources of energy.

How about the soil microbiologists, the biochemists and the plant breeder tackling the nitrogen fixation problem even to the development of cereals or even root crops capable of coming to the same comfortable symbiotic arrangements with colonies of nitrifing bacteria as do peas, beans, and clover, and help in reducing the large energy input in the form of chemical fertilizers? The plant physiologist and biochemist can follow another biological avenue towards energy conservation in increasing the use of plant hormones or of chemicals which tend to control the growth, size, flowering and fruiting of crops, giving a much better output-to-input energy balance. How about the plant breeder and the cell biologist being concerned about the high energy costs in obtaining proteins from animals and consider developing cereal varieties which yield amino acids of a type and quantity much closer to those for which we at present rely upon meat? How about the animal nutritionist and animal physiologist moving livestock off the feedlot back to the forage and grazing environment and the utilization of a wide variety of cellulose waste that can be recycled into animal protein, thereby competing again with plant protein? How about the food chemist and engineer designing better devices for collecting and fermenting biomass and food wastes of all sorts for the production of methane, not just to burn, but to provide the energy for single-celled cultures to eventually become feedstuffs for animals, yes, and even food for human diet? How about the agricultural economist looking beyond his tunnel vision of cost benefit ratios and rejoice in the systems analysis of scientific and technical systems of production and processing in achieving a reduction in our resource depletion and assisting others in understanding the sociological and ecological impact of our technology?

In conclusion, may I say to all graduates, the problems in our world of today have never been so great and therefore great are the challenges and opportunities. May I extend best wishes to you and may your reach ever exceed your grasp, and your energy sufficient for the task at hand. May I also extend sincere appreciation and congratulations to the families of our graduates for their investment of energy and resources in these, their children or spouses. It has been a great contribution that you have made while living, and may you feel satisfaction in the accomplishments of this day.

FACULTY OF AGRICULTURE

DIPLOMA IN AGRICULTURE

Candidates presented by Professor N. C. Lawson, Director of the Diploma Course

*Allard, Normand, Valleyfield, Que., Ralston Purina Prize for Project;
Anderson, William C., Howick, Que., Honours;
Benson, John A, Mansonville, Que., First Class Honours;
Berndt, Daniel L., Thurso, Que., First Class Honours;
*Bienz, Jacques, Lacolle, Que., Honours;
Bray, Wanda L., Roxboro, Que.;
Dumas, Daniel, McMasterville, Que.;
Ellwood, Neil, Chambly, Que., Honours;
Finnie, Lee D., Pointe Claire, Que., Honours;
*Howieson, John, Athelstan, Que.;
*Irving, Brian G., Howick, Que.;
*Jenner, John, Verdun, Que.;

*Kavanagh, Michael J., Ste. Marthe, Que., Honours;
MacArthur, Irvin, Laval, Que.;
*Metayer, Raymond, Rigaud, Que., Honours;
Muirhead, Lynne A., Ste. Anne de Bellevue, Que., First Class Honours; Ministry of Agriculture for Quebec Gold Medal;
Oxley, Keith A., Chambly, Que., Honours;
Pratt, Richard A., Pierrefonds, Que., First Class Honours; Ministry of Agriculture for Quebec Silver Medal;
Rioux, James A., Danville, Que.
Robinson, Glenn, Inverness, Que., Honours;
*Seguin, Normand, Verdun, Que.;
*St-Julien, Gilles, Verdun, Que.;
*Templeton, Roy K., Howick, Que., Honours;
Wilson, Christopher, St. Lambert, Que.

* — In abstentia

DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE

Candidates presented by Professor E. S. Idziak, Director of the School of Food Science

Bujold, Chantal, Ville St-Laurent, Que., (Dietetics);
Chung, Kwai Lin J., Tai P.O., N.T., Hong Kong, (Dietetics), Honours;
Cyr, Madeleine, Montreal, Que., (Dietetics);
*Davey, J. Debra, Montreal, Que., (Dietetics), First Class Honours; University Scholar; Harrison Prize;
Ferraro, Anna Maria, St. Léonard, Que., (Dietetics), Honours;
Kollar, Helen, Laval, Que., (Dietetics), Honours;
Newman, Keith R., Montreal, Que., (Food Chemistry), Honours;
O'Connor, Ellen M., Montcerf, Que., (Consumer Sciences);
*Perez, Jacqueline, Montreal, Que., (Dietetics), Honours;
Port, Michele, Pierrefonds, Que., (Dietetics), Honours; University Scholar;
Rhode, Barbara M. E., Montreal, Que., (Dietetics), First Class Honours; Governor General's Medal; J. W. McConnell Scholar;
St-Aubin, Claire, Laval, Que., (Dietetics), Honours;
Tse, Andrew K. S., Montreal, Que., (Dietetics), Honours;
*Walker, Margaret, Newton P.O.S., Trinidad, W.I., (Dietetics), Honours;
Wong, Mo-Ling, Singapore, (Dietetics), Honours.

* — In abstentia

DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Agricultural Sciences Division

Candidates presented by Professor S. P. Touchburn, Coordinator

Abdel Messih, Nabil Y., Montreal, Que., (Animal Science);
*Abou, François, Upper Volta, Africa, (Soil Science);
*Bergeron, Jean-Marc, Montreal, Que., (General Agriculture), First Class Honours;
*Blais, Pierre, Sherbrooke, Que., (Agricultural Economics), Honours;
Bolduc, Jean-Louis, Lasalle, Que., (General Agriculture), Honours;
Chang, John C., Montreal, Que., (Plant Science-Horticulture), First Class Honours; University Scholar;
Child, Graham R., Ste. Anne de Bellevue, Que., (Animal Science), Honours;
*Clement, Marc F., Montreal, Que., (Plant Science-Horticulture), Honours;
Croze, France, Ste. Rose, Que., (Animal Science), Honours;
Danten, Charles, Roxboro, Que., (Animal Science), Honours;
David, Pierre J. R., Ste. Brigide, Que., (Animal Science), Honours; J. W. McConnell Scholar;
*Desjardins, Suzanne, Montreal, Que., (General Agriculture), Honours;
Douglas, David R., Chateauguay, Que., (Animal Science), Honours;
Dubois, André, St. Antoine Abbé, Que., (Plant Science), Honours;
Dunne, Maureen, Roxboro, Que., (Animal Science), Honours;
Gauthier, Ronald, Pointe Claire, Que., (Animal Science);
Hall, Michael D., Dorval, Que., (Animal Science);
Hartmann, Harry, Montreal, Que., (Plant Science-Plant Protection), Honours;
Harvie, John S., Canning, N.S., (General Agriculture);
Jasmin, Linda, Ville St-Laurent, Que. (General Agriculture);
Kingston, Karen E., Vernon, B.C., (Animal Science), Honours;
Kisilenko, Janet, Beaconsfield, Que., (Animal Science), Honours;
*Koala, Saidou, Upper Volta, West Africa, (Soil Science), Honours;
Kumbongsi, Dyx M-A, Buea, S.W. Province, Cameroon, (Plant Science), Honours;
Lafontaine, Peter M., Lasalle, Que., (Animal Science), Honours;
Laporte, J. Edward, Lasalle, Que., (General Agriculture), Honours;
Lapostolle, Alain, Ville St-Laurent, Que., (Animal Science), Honours;
Maynard, Ronald W., Tynne Valley, P.E.I., (Animal Science);
McCatty, Thelma J., Ville St-Laurent, Que., (Plant Science), First Class Honours;
Moore, Alfred A., Verdun, Que., (General Agriculture), Honours;
*Nantel, François, St-Augustin, Que., (Agriculture Economics), Honours;
*Parlee, Philip L., Apohaqui, N.B., (General Agriculture), Honours;
*Pellicer, Henri, Montreal, Que., (Agriculture Economics), Honours;
Piche, Paul, Montreal, Que., (General Agriculture), Honours;
Richard, Alain, Malartic, Que., (Animal Science), Honours;
*Rochefort, Guy, Montreal, Que., (General Agriculture), Honours;
*Rudnikoff, Earl R., Montreal, Que., (Soil Science),
*Shannon, Dennis A., Joliette, Que., (Plant Science), First Class Honours; University Scholar; Cutler Shield;
Smythe, Ian M., Pincourt, Que., (Plant Science-Horticulture);
Vanderwoude, Robert A. P., Chateauguay, Que., (Animal Science), First Class Honours; University Scholar; Canadian Society of Animal Science Book Prize;
Vincent, Robert, Longueuil, Que., (General Agriculture);
Walter, Richard R., Baie d'Urfé, Que., (General Agriculture), Honours;
Weiler, William, Chateauguay, Que., (General Agriculture), Honours;
Wells, Darryl L., Moncton, N.B., (General Agriculture), Honours;
*Wilson, Brian C., Stanley, N.B., (General Agriculture), Honours;
Wolff, Evelyne, Cartierville, Que., (Animal Science), Honours.

* — In absentia

Biological Sciences Division

Candidates presented by Professor R. K. Stewart

Asiedu, Samuel K., New Tafo-Akim, Ghana, (Botanical Sciences), Honours;
Baumbrough, Shelley A., Vernon, B.C., (Environmental Biology), First Class Honours; J. W. McConnell Scholar;
*Beauregard, Gary, St-Laurent, Que., (Zoological Sciences);
*Becker, Rosemarie S., Beloeil, Que. (Zoological Sciences), Honours;
Blakely, Dale M., St. Eustache, Que., (Environmental Biology);
*Francoeur, Danielle, Montreal, Que., (Botanical Sciences), First Class Honours, University Scholar;
Finnamore, Albert T., Fredericton, N.B., (Zoological Sciences), Honours; Lockhead Memorial Prize;

Hardy, Richard S., Baie d'Uurfé, Que., (Zoological Sciences), First Class Honours;
Holden, John C., Roxboro, Que., (Environmental Biology), Honours;
Holzgang, Grant K., Lasalle, Que., (Botanical Sciences), Honours;
Karayan, Jirair, Aleppo, Syria, (Microbiology);
Klein, Theodore M., Bronx, N.Y., (Botanical Sciences), Honours;
Latimer, Sharon L., Tatamagouche, N.S., (Environmental Biology);
MacLean, R. Grant, Dorval, Que., (Environmental Biology);
Menard, Roger, La Providence, Que., (Environmental Biology);
Millet, Gloria, Montreal, Que., (Environmental Biology), Honours;
Nowlan, Judith A., Montreal, Que., (Environmental Biology);
Slater, Jonathan D., Hemmingford, Que., (Zoological Sciences), First Class Honours;
Smith, Caren L., Dorval, Que., (Microbiology);
Smith, Karen M., Brossard, Que., (Environmental Biology), First Class Honours;
Sussman, Richard G., New York, N.Y., (Microbiology);
Walp, Susan P., Pasadena, Calif., (Environmental Biology), Honours.
* — In absentia

Renewable Resources Development Division

Candidates presented by Professor A. R. C. Jones, Coordinator

*Aldana, Efrain, Orange Walk, Belize, C.A., (Agricultural Land Planning and Development), Honours;
Alexander, Allen H., Montreal, Que., (Wildlife Resources), First Class Honours; J. W. McConnell Scholar;
Burgess, Stephen, Dorval, Que., (Wildlife Resources), Honours;
Carlington, Bernard G., Montreal, Que., (Wildlife Resources), Honours;
Chappell, William A., Beaconsfield, Que., (Wildlife Resources), First Class Honours; J. W. McConnell Scholar;
Curry, S. Gail, Guelph, Ont., (Wildlife Resources);
Domaradzki, Jack R., Montreal, Que., (Wildlife Resources), Honours;
*Healey, Ronald A., Sydney, N.S., (Wildlife Resources), Honours;
*Mackay, Colin, Montreal, Que.; (Wildlife Resources), Honours;
Mparia, Jean R., Montreal, Que., (Agricultural Land Planning and Development);
Munro, Donald W., Ste. Anne de Bellevue, Que., (Resource Economics and Planning), Honours;
Newman, M. Louise, Pointe Claire, Que., (Community Resource Development), First Class Honours; Governor General's Medal; University Scholar;
Pasteris, Remo, Montreal, Que., (Wildlife Resources);
Savage, Steven, Beaconsfield, Que., (Community Resource Development) First Class Honours; University Scholar;
*Semark, Susan M., Pierrefonds, Que., (Wildlife Resources), Honours;
*Sills, G. Martin, Vancouver, B.C., (Environmental Conservation), Honours;
Steeves, James H., Moncton, N.B., (Wildlife Resources), Honours;
*Struger, Steve A., Montreal, Que., (Wildlife Resources), Honours;
*Szita, Barbara A., Roxboro, Que.; (Wildlife Resources), Honours;
Tinker, Stephen H., Lachine, Que.; (Wildlife Resources), Honours;
Turner, John V., Lachine, Que., (Environtal Conservation).
*—In absentia

DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Candidates presented by Professor J. R. Ogilvie, Chairman, Department of Agricultural Engineering

Baker, Colin E., Huntingdon, Que., Honours;
Deslandes, Richard, St-Dominique, Que., First Class Honours;
Gray, Alan S., Ste. Anne de Bellevue, Que., First Class Honours;
Hermon, Janet L. R., Beaconsfield, Que., First Class Honours;
Landry, Richard, Montreal, Qué.
Munro, Roderick L., Montreal, Que., Honours;
Perras, Michael L., Beaconsfield, Que., Honours;
Werszko, Henryk, Montreal, Que., Honours.
* — In absentia

FACULTY OF GRADUATE STUDIES AND RESEARCH

Candidates presented by Professor E. Pedersen, Vice-Principal (Academic)

MASTER OF SCIENCE

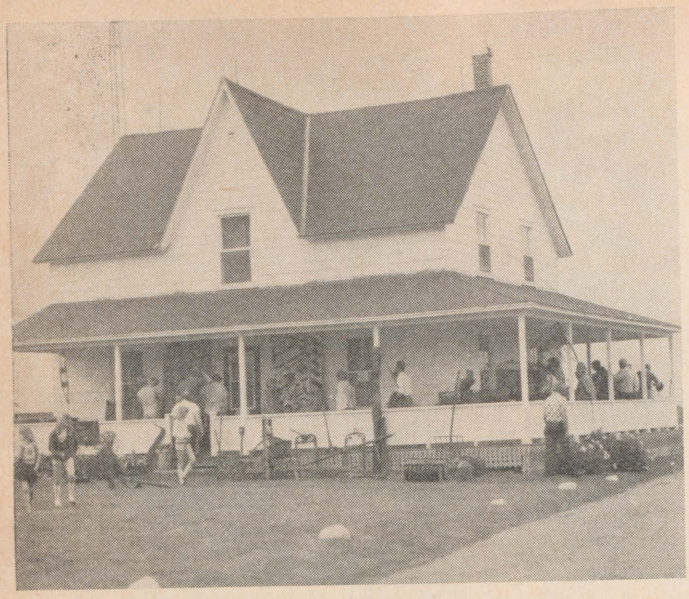
*Azad, Hamid R., B.Sc. (Pahlavi), Iran (Plant Pathology);
Bird, David M., B.Sc. (Zoology) (Guelph), Quebec (Renewable Resources);
Forgrave, Lynn F., B.Sc. (Bishop's), Quebec (Animal Science);
Herskowitz, Joan M., B.Sc. (Brooklyn), United States (Plant Pathology);
Johnson, Dominic A., B.Sc. (Memorial), Newfoundland (Animal Sciences),
*Jones, Mona T., B.Sc. (Sir George Williams), Quebec (Entomology);
Ju, Hak Yoon, B.Sc. (Seoul National), Korea (Horticulture);
*Parkinson, Verona O., B.Sc. (Sierra Leone), Sierre Leone (Plant Pathology);
Pathiarana, Kumarasiri K., B.V.Sc. (Ceylon); Sri Lanka (Animal Science);
Raptis, Leda H., M.Sc. (Athens), Greece (Plant Pathology);
Rosewell, Kenneth T., B.Sc. (Agr.) (McGill), Quebec (Agricultural Chemistry);
*Stephens, Christian A., B.Sc. (Agr.) (McGill), St. Vincent, West Indies (Animal Science);
*Taylor-Cline, Henry S., B.Sc. (Sierra Leone), West Africa (Animal Science).
* — In absentia

MASTER OF SCIENCE (APPLIED)

Aboye, Abebe, B.S. (Haille Sellassie), M.Sc. (Agr.) (Hebrew), Ethiopia (Agronomy).

DOCTOR OF PHILOSOPHY

Abu-Hakima, Randa, B.Sc. (Hon.) (London), Cairo, Egypt (Parasitology)
"The action of juvenile hormone on follicle cells in the insect *Rhodnius prolixus Stâl*".
*Baron, Robert W., B.Sc. (Manitoba), M.Sc. (Manitoba), Manitoba (Parasitology)
"Studies on the immunology of *Echinococcus multilocularis* infections in the mouse".
Choo, Thin-Meiw, B.Sc. (Agr.) (Taiwan), Malaysia (Agronomy)
"The effect of location on natural selection in bulk populations of barley *(Hordeum vulgare* L.)".
Ejezie, Gabriel C., B.Sc. (Hon.) (Nigeria), Nigeria (Parasitology)
"Some aspects of endocrine control of reproduction in the female of the tsetse fly, *Glossina austeni*".
Goh, Soon Leong, B.Sc. (Hon.) (U.B.C.), M.Sc. (U.B.C.), Malaysia (Parasitology)
"Aspects of biogenic amines and the nervous system in a parasitic nematode, *Phocanema decipiens*".
Robinson, A. Robin, B.Sc. (Agr.) (McGill), M.Sc. (McGill), Quebec (Agricultural Chemistry)
"Studies on the *in vivo* conjugation of steroid estrogens in the domestic fowl".
Srivastava, Shanta T., B.Sc. (Agra), M.Sc. Zoology (Lucknow), M.Sc. Entomology (Montr), India (Entomology)
"Aging of the circulatory system of the house cricket, *Acheta domesticus* (L.), in relation to photoperiod".
* — In absentia



Open Farm Day

photostory
by
extension staff

Good days should be remembered — and the Open Farm Day at John Boersen's farm, Melbourne, was a day worth saving on film! The 30 families in Richmond Quebec Farmers' Association worked long hours to prepare for June 20, when they hosted "the old and the new" of farming to over 1,500 visitors from cities and farms. Members gathered together antique farm machinery to demonstrate in the field alongside modern equipment. They filled the broad veranda of the Boersen home with old tools and household implements and mementoes.

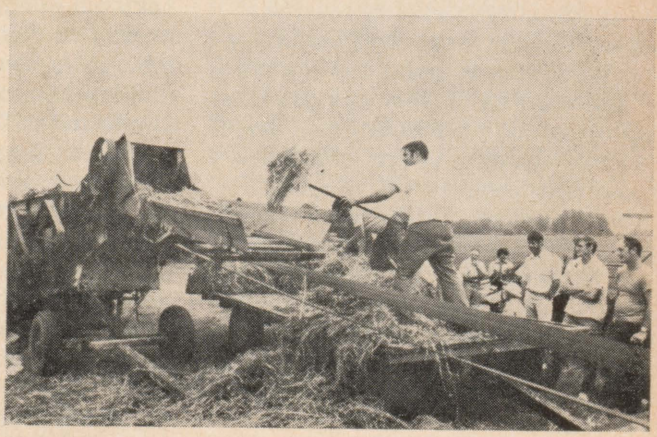
It was a day for bridging the past and the present. While Judy Johnston made butter in an antique churn,

she told us that she churns her family's butter all the time (in a modern churn). Many young people watched a blacksmith for the first time, as Tom Coddington worked in his shop, set up in a shed. Roderick Morrison had his old drag saw working. Hay was cut and gathered in the field with teams of Belgian horses and antique equipment, side by side with new machinery. The porch became a gathering place for many people of all ages and the conversation often became a fascinating history lesson of the area. Joan Morrison coordinated a large collection of small tools and household antiques.

The barn was filled with interesting displays, many breeds of cattle, most of the farm animals, and a fine collection of old sugaring equipment. But best of all were the 450 entries in the elementary school poster contest, beautiful, thoughtful posters on various farming themes.

Quebec Young Farmers provided excellent ice cream, and the Quebec Farmers' served sandwiches, doughnuts, and coffee.

The intention of the Open Farm Day was to bring rural and urban people together in a farm setting with the idea of fostering greater understanding between city and country people. It was a festive occasion and a day when the warmth of the Richmond people was very much in evidence. Many visitors commented that it was "better than a country fair", and the Richmond QFA should be congratulated for their hard work and creativity.



SOIL TESTING

By Gaetan Duplessis
Post-Graduate Student
Department of Renewable Resources

Dr. A. F. MacKenzie, soil fertility specialist at Macdonald College, says that approximately 30 per cent of the variability of crop yields are due to soil chemical conditions. The acidity of the soil and the great availability of plant nutrients such as phosphorous, nitrogen, and potassium all can be improved through a good lime and fertilizer program, but first you should know the soil's present condition.

A good soil test will give four basic pieces of information: the acidity level or pH, the amount of available phosphorous and potassium in the soil, and an estimated nitrogen need. With this information, an appropriate fertilizer program can be established.

In Quebec, where there is an abundance of precipitation, soils have a tendency to become more acid with time. Most agricultural crops grow best in a soil that is near neutral but slightly on the acid side — approximately pH 6.0 to pH 6.5. When the pH is too low the toxicity levels of iron and aluminum can create problems; if a soil is acid (low pH), liming will raise the pH and automatically prevent aluminum absorption by the plant. Liming should only be done after a pH test has been made and test recommendations should be followed as closely as possible. Too often soils are over-limed and become alkaline, which creates a difficult problem to resolve. Liming should only be done when the soil is least likely to compact; that is, when the soil is dry, preferably in mid-summer. No more than three or four tons per acre of agricultural limestone should ever be applied in any one year.

Fertilizer application and nutrient availability are far more delicate problems than is liming. Every crop has a given requirement for nitrogen, phosphorous, and potassium. The amounts required vary from plant to plant. The economics of fertilization also make it a very crucial part of farm management. Under-fertilization results in lower yields and therefore loss of revenue. In soils with low fertility, a certain amount of fertilizer must be added for a significant increase in yield to occur. Money and labour can be wasted through over-fertilization as crop yields can only increase to a certain point. Too much nitrogen fertilizer on grain crops will cause lodging and will result in poorer yields. Excess phosphorous on corn can sometimes also reduce yields. It is therefore extremely important to consider the soil first when planning a fertilizer program.

The best time to get soil tested is in the autumn after the last harvest. This ensures that the test results will be available before the following spring when fertilizer shortages tend to develop or prices start to increase. It is also important to take soil samples after the growing season, as this indicates only nutrient levels left in the soil and available for the next growing season.

Taking a good soil sample is as crucial to the analysis as is the laboratory work. Fields should be divided by soil types and drainage similarities. The sampling area can be as large as 10 to 15 acres if the soil sample is properly taken. A representative sample can be made by taking many small samples over the sampling area and mixing them in a clean container. Borders, buildings, fences, dead furrows, and other small areas which are either subject to traffic or are not representative of the sampling site should be avoided. Approximately two cups of soil are needed for analysis and this should be stored in a clean bag or container and appropriately labelled.

Micro-nutrients such as manganese, copper, iron, and zinc, though essential to proper plant development, can sometimes be a problem. If these are found in excess or, conversely, if the soils are deficient in any of these, the result will be reduced yields, even crop failures. Several publications are available from the Quebec Department of Agriculture on the deficiency symptoms of these nutrients. If such conditions are suspected, an agronome should be consulted. Both soil and plant analysis can be very useful in determining the problem and this is usually done by comparing plants and soils from good areas against those from the bad areas. The best suggestion is to consult your nearest laboratory or agronome for the proper sampling procedures.

There are many laboratories where soils can be tested. Ask your agronome where your soil can be tested. There are also private laboratories operated by some fertilizer companies or by universities. One of these is the Soil Testing Service at Macdonald College which provides both test results and recommendations for fertilizer and lime requirements. Fertilizer tables based on soil test values are also available through government agencies.

For maximum returns per dollar of invested fertilizer and seed, it is always best to consider existing soil conditions first. Land tested every five years, followed by an appropriate fertilizer program will ensure the most efficient use of the soil for crop production.

The Family Farm

Published in the interests of the farmers of the province by the Quebec Department of Agriculture.

SPECIAL HORTICULTURAL CROPS

by Charles Lapointe, Agronome
Crop Products Division

Introduction

Horticultural production in Quebec generally refers to widely-grown crops such as carrots, onions, cabbages and potatoes. There are, however, certain crops which are grown on a smaller scale. owing to lack of technical expertise, adaptability, high cost of buildings and equipment and the risks involved in the production and marketing of the product.

We shall briefly consider a few of the more popular special crops such as garlic, cranberries, cultivated mushrooms, witloof endive, and white beans in an attempt to better understand their importance in Quebec and to determine the requirements for success in their production.

GARLIC

A. General Information

Garlic is a bulbous plant belonging to the onion family. The bulbs, commonly called garlic heads are made up of bulblets or "cloves" which are used in the propagation of the plant since it flowers very rarely. Garlic is used either fresh or dry as a seasoning in cooking.

Garlic production in Canada is very limited and does not even meet five per cent of the Canadian fresh garlic demand. All our dried garlic is imported. California, which produces almost all the garlic in the United States, and Mexico are our main suppliers.

Quebec's production is equally marginal and irregular. For example, during the period 1972-1974, annual deliveries of home-grown fresh garlic varying between 8,000 and 19,000 pounds were received on the market in Montreal and Quebec City (according to freight reports released by Agriculture Canada), while annual imports averaged between 500,000 and 750,000 pounds. Local supply is thus negligible and the areas in garlic, all of which are smaller than an acre per producer, are operated on a small-scale basis by hand. The lack of impetus in the Quebec garlic-growing industry is generally attributed to production and marketing problems.

B. The Growing of Garlic

We shall first of all take a brief look at the general growing conditions required for garlic and then turn to the more specific problems entailed in its production.

Garlic requires a warm season and a growing period of at least 90 days. The greater part of its leaves are formed during the short cool days at the beginning of summer and, as the days grow longer and warmer, it begins to store food in the bulb. The plant needs a light, moisture-retaining but well-drained soil. Early spring planting is generally recommended for Quebec but, in Ontario, farming guides add that fall planting in late September or October favours early growth in the spring and an earlier harvest — although a certain number of such plants do not survive the winter. The cloves should be be planted not too deeply with the tapered end just beneath the surface of the soil. Deep cultivating and hoeing should be avoided since garlic has a basically shallow root system.

The following points must also be considered when discussing the present situation in Quebec as regards the growing of garlic. Planting and harvesting are done by hand and the cost of labour continues to rise steadily. The seeders used in California (described in the literature on the subject as modified bean seeders) have not yet been tried out in Quebec. In California, machine harvesters are used only for harvesting garlic intended for drying. It must also be noted that there is a lack of recommendations on the use of herbicides in the growing of garlic. Because the production of this crop is of a minor economic importance in Canada, no herbicide has been approved specifically for it.

C. Marketing

According to some wholesalers, there is a good demand for locally grown braided garlic. Our local output, however, is much too small to interest buyers if this product is to be sold in bulk. Growers interested in this type of production should inquire into the local availability and cost of the labour needed for growing and braiding garlic. There is also the direct sale of the product to restaurants, supermarkets, and other retail outlets. But before rushing into this type of crop production, it is important to come to a clear understanding with the buyers involved.

CRANBERRIES

A. General Information

The berries of the large-fruited cranberry plant indigenous to North America and also called "atocas" in French and "swamp-berry plant", are used in the making of juices, mixed drinks, and as a sauce to accompany poultry meat. Although cranberries have been introduced into countries elsewhere, their commercial production is still carried out almost exclusively in Canada and the United States. The annual U.S. production is estimated at more than 200 million pounds. In Canada it averages about 12 million per year, 80 per cent of which is produced by British Columbia.

The "Société des Producteurs de Québec Ltée" is the only cranberry enterprise so far set up in Quebec. Directed by Charles Larocque, its founder, it has 85 acres in crop, 55 of which are situated at Lemieux in the south-west area of Nicolet County, and 30 acres at Ste-Marie de Blanford, a few miles from Lemieux. With yields varying between 75 and 250 one-hundredweight barrels per acre and exceeding the North American average, this is a large concern whose entire crop is processed. It should be noted that cranberries are cultivated in a special ecological environment and that commercial production calls for a considerable outlay of capital, very good management, and continuous work.

B. Growing Conditions

In the wild state, cranberries grow in slightly decomposed organic soils considered to be of poor quality. In general these are more or less impermeable soils found in regions where a severe climate and high precipitation result in slow plant decomposition. Since cranberries nevertheless need a relatively long growing season, they are not well suited to areas liable to frosts too early in the fall.

C. Starting a Cranberry Bog

In setting up a bog for cranberry production, an attempt is made to duplicate the natural ecological conditions as much as possible. There must be an almost unlimited supply of water, preferably acid so as to avoid the alkalization of the soil. Irrigation is a a safeguard against droughts and frosts. The fruit is harvested late in the fall when the temperature may drop below 4%C (tolerance level for cranberries) in the lower-lying areas of the bog. Sprinkler irrigation at this time is used to save the fruit from freezing. Harvesting the berries wet, as carried out in Qubec, requires flooding the cranberry field with six to eight inches of water. The fruit is removed from the branches with the aid of a motor beater which churns the water like an egg-beater as it moves along the cranberry plots. The berries are then gathered in and picked up with a scoop fitted with a conveyor belt. After the first major frost, the plants must winter in a protective layer of ice about six inches deep which saves them from dessication.

Preparing a peat bog for growing cranberries is very costly, but necessary. According to a recent study by the Ontario Research Foundation, it costs approximately $5,000 per acre to clear and level the land, lay out a drainage and irrigation system and plant the field. The first crop is harvested only after four or five years.

D. Annual Operations

It costs about $500 to $600 annually for operations such as water removal in the spring, cleaning up, herbicide and fertilizer application, harvesting, irrigating, and flooding for harvesting the crop and wintering the plants. Commercial production of cranberries is nonetheless profitable if the previously-mentioned conditions are met, namely a special ecological environment, an almost unlimited supply of water, considerable capital to set up and operate a cranberry crop and satisfactory yields of 10,000 pounds or more per acre. As in the case of all special crops, motivation and perseverance are needed for success.

CULTIVATED MUSHROOMS

A. General Information

Without leaves or flowers, mushrooms are plants which reproduce by spores. Lacking chlorophyl also, they cannot produce their own food using the CO_2 in the air and therefore rely on decomposing organic matter for nourishment.

Although a great variety of edible fungi grow wild, it is not easy to duplicate natural growing conditions for commercial production. Only one edible kind has been domesticated and cultivated on a large scale, namely *Agaricus bisporus*, commonly called the cultivated mushroom. This species comprises several varieties

ranging from pure white through creamy shades to brown.

The cultivated mushroom has been grown in Canada for approximately 60 years. According to the Canadian Association of Mushroom Producers, annual production exceeds 40 million pounds. It is therefore one of the country's most important vegetable crops. Ontario leads with 65 per cent of the total production, followed by Quebec and British Columbia; the prairies and the Maritime provinces trail with a limited production.

In Quebec there are a few minor producers of mushrooms but a major enterprise, Slack Brothers Ltd. of Waterloo, is responsible for the bulk of the province's supply. This company produces mushrooms for the fresh market and also cans or freeze-dries part of its production.

We will now take a brief look at the production and marketing problems confronting the mushroom producer in Quebec.

B. Production

Steady and profitable mushroom production requires years of experience, thorough technical knowledge, and considerable investment. To obtain from 2.5 to three pounds of mushrooms per square foot, a rich healthy compost is needed as well as ideal growing conditions and constant care and attention.

Mushrooms are grown in special buildings with controlled temperature, humidity, and ventilation. The basic unit of production consists of 4,000 square feet of surface divided into beds which are arranged in two rows from five to nine levels high. An average Canadian grower has from five to 10 mushroom units while a major producer may have 150 or more.

To the experienced producer the composition and pasteurization of the compost are highly important. Two types of compost may be used. The first has a horse-manure base and the second a corncob and hay or straw base with added supplements. In order to maintain ideal air and moisture conditions for rapid (less than two weeks) and uniform compost decay, a special machine must be used which turns the compost heap, breaks up the lumps and adds water and certain supplements. Placed on the beds inside the mushroom house, the compost is then pasteurized for several hours at a temperature of 54-60°C to destroy harmful organisms and ensure uniform decomposition.

The compost is then seeded with the mushroom spawn, i.e., Agaricus mycelium cultured on sterilized grain. For two to three weeks the mycelium is left to grow and spread through the compost and is then covered with an inch of disinfected casing soil, which is a good-texture soil mixed with sand, peat moss, and lime. This is a necessary procedure because modifying the conditions under which the mycelium develops stimulates it into fruiting, i.e., into producing the actual mushrooms.

If the soil and air are properly moist and the temperature is maintained at 13 to 18°C, mushrooms emerge at intervals of seven to 10 days over a period of two months or more, the yields of these successive croppings declining gradually.

The protection of this crop is of prime importance. Despite all the disinfections (of spawn, compost, casing soil, mushroom beds) the grower must constantly watch out for nematodes and insects and especially for moulds and and other parasitic fungi which thrive in such a favourable environment.

C. Marketing

Not all the fresh mushrooms consumed in Quebec are grown in the province. Ontario and the United States supply part of the demand while a certain percentage of the local production is exported. It might be assumed that the fresh market in Quebec is also relatively open to new producers. However, since the best growers are able to sell on the fresh market only about 50 per cent of their total crop owing to the requirements of high quality, an outlet must be found for the remaining production to ensure profitability. It is difficult though to compete with the cost of products from the Orient and thus the processing market is more or less closed to the small grower.

One must therefore view the situation realistically and regard mushroom farming as a specialized activity requiring heavy investments and good technical knowledge. A sufficient supply of horse manure or corncobs, two basic components of compost, is another important factor to keep in mind. Moreover mushroom growing is a risky occupation because, over and above the problems of diseases and insects attacking the crop, there is the pressure of a very competitive market which puts the small producer at a disadvantage.

WITLOOF ENDIVIE

A. General Information

Witloof endive, also known as Belgian or French endive, is a vegetable whose tightly-arranged whitish leaves form a conical head. This choice vegetable is on sale in Quebec during the cold season and does not seem to be widely known in the other Canadian provinces and the United States.

Canadian imports which depend on European surpluses come mostly from Belgium and occasionally from France. These imports are irregular, as shown by the "Annual unload report on fresh fruits and vegetables on 12 Canadian markets," a report prepared by the Production and Marketing branch of Agriculture Canada. For the period 1966 to 1974 our annual imports of Witloof endive varied between 40,000 and 340,000 pounds.

Generally in Quebec, because of the various difficulties involved in its production on a commercial scale, only enough endive is grown for individual family needs. It is probably one of the most exacting of market-garden crops because it has to be grown in two different stages: in the field during summer and then "forced" in a dark well-protected place during the cold season.

The "Société Distribution Chicon Inc.", situated at St. Clet in Soulanges County and jointly owned by Joseph Delattre, Jean-Michel Schryve and their wives has nevertheless shown during the past year that choice grade Witloof endive can be produced steadily from September to April. Already in their first year of operation in Quebec, they are able to offer about 6,000 pounds of endive per week. The introduction of specialized equipment and a brand new "forcing" technique from Europe has enabled the Company to produce this vegetable in our Quebec climate. Jean-Michel Schryve, a specialist with about 15 years' experience in endive growing and a sound knowledge of the new growing technique, has helped the Company to adapt production to local conditions. However, all this has necessitated a considerable outlay of capital.

B. Production

Growing the roots in summer calls for a good knowledge of the plant's requirements. Early seeding should be avoided with this type of plant, otherwise the late frosts will cause it to seed as early as the first year and then the roots cannot be used for forcing. The early fall frosts may also affect the quality of the roots. In addition, endive requires adequate fertilization to promote formation and early maturation of the roots. Good growing methods to control diseases and harmful insects, adequate hoeing and cultivation and proper use of pesticides are also important for success.

The quality of the product obtained by forcing will depend, in part, on the quality of the roots from the field. These roots will not produce a yield unless they are subjected to special conditions at forcing, namely complete darkness, sufficient water, and heat.

Production by the traditional method of forcing is greatly hampered by the severe Canadian climate since this method consists in digging up the roots and transplanting them in an outside location specially equipped for heating the soil either by electricity or hot water. A shelter is used to maintain adequate air temperature. There is very little chance of this forcing technique being used successfully in Quebec.

During the past few years, a number of European producers have been transplanting the roots into special crates containing a growing medium. These are kept in a cool place until forcing, at which time they are moved to closed chambers where the temperature and humidity of the air and soil are controlled. Since forcing lasts only three weeks, the chambers can be used several times in succession.

Controlled storage and forcing conditions, however, require the constant supervision of very competent and experienced specialists. It is this new technique, compatible with our severe winters, which has been introduced into Quebec and adapted to local conditions by Jean-Michel Schryve of the Société Distribution Chicon Inc., and has enabled the company to send a regular supply to the market from September to April.

Briefly, the three-fold aim of "quality, quantity, and regularity" in producing Witloof endive in Quebec is dependent on thorough technical knowledge, reliable experience, and considerable capital.

WHITE BEANS

A. General Information

For several years the type of beans used in making pork and beans has been grown in the Richelieu region but it is only since 1969 that this crop has been given close attention. In that year, although statistics indicate that Quebec had 1,000 acres planted to these beans, it was difficult to find even 30 acres of them in the parish of Ste. Madeleine.

At the beginning the growers themselves sold their product on the retail market. At that time white bean growing was considered to be only a small-scale venture, old-fashioned methods being used in harvesting and the stationary Forano thresher, which today has almost become a museum piece, being used for threshing.

Statistics for the same period show that Ontario then had 93,000 acres in white beans — enough to rouse the curiosity of the St. Hyacinthe growers who had experience in growing beans for canning. They also had good soil and, in the absence of proof to the contrary, favourable climatic conditions.

In brief, this has been the course of events leading to the decision to promote white bean growing in the Richelieu region. The following table gives an idea of trends so far.

	1969	1970	1971	1972	1973	1974	1975
Number of Growers	3	33	41	35	13	15	14
Acres in Production	33	430	600	589	210	450	400
% of Acreage Harvested	100%	45%	100%	50%	80%	90%	100%
Average Yield (in pounds per acre)	1800	1500	2000	1500	1800	1500	1200
Price per 100 pounds (in dollars)		10.00	12.00	7.00	22-50	13-14	40.00

B. Production

Until now, those farmers interested in growing white beans have not been subject to any selection; hence some have been good and others not so good. However, experience has shown that the better growers have succeeded almost every year in getting in their crop, because they were prepared and aware of the importance of completing their harvest operations on time. It thus appears that these better producers will continue to find white bean growing profitable.

Weed problems have been coped with by the use of herbicides in the spring and a defoliant "Reglone" at the end of August.

The ripe beans must be cut and swathed. At present there are, for this purpose, two and four-frame cutters and swathers which the best growers find much more efficient than the formerly used hay rakes. The cut and swathed beans are then threshed in the field with a specially equipped combine.

Mr. Denis Beauregard of Ste. Madeleine was the first to buy a bean thresher, thus showing the interest and confidence of producers in this type of farming. Réal Dupont of Mont-St-Grégoire and Emilien Tétreault of Ste. Madeleine have also continued to grow this crop despite some setbacks, and are now considered to be the regional champions.

Philippe Martin, Agronome, and market-gardening adviser at the St-Hyacinthe regional office and the main promoter of this crop in Quebec, reminds beginners of the following important points:

— Weed control is of primary importance;
— The harvesting of white beans cannot be delayed and the appropriate harvesting machinery should be procured before the beans are sown;
— Drainage and soil fertility are also very important.

Mr. Martin adds that growing white beans is a very profitable but also a very risky business. He would be happy to meet any new producer and discuss the the subject further with him.

(Note: Mr. Lapointe wishes to thank the horticultural enterprises concerned, the agronomes, the horticultural advisers in the St. Hyacinthe, Assomption and Nicolet regions and the Marketing and Special Programs Divisions in Montreal for their helpful co-operation.)

This Month with the QWI

(We were fortunate to receive the President's report of the recent FWIC Convention in time for this month's issue. Specials and other materials already received will be published as soon as possible.)

Federated Women's Institutes of Canada Seventh National Triennial Convention, University of Prince Edward Island, June 18-25, 1976 Charlottetown, P.E.I.

After a good flight from Dorval on Thursday, June 17, Mrs. Wells Coates and I were welcomed by Mrs. L. MacMillan, a P.E.I. WI member, and Mrs. Coates' daughter, Mrs. Coleen Younie, who lives in Morell. She very kindly drove us to the Kirkwood Motel where Board members were staying. Colleen took her mother and I for a long drive so that we would see as much of the Island as possible. It was all new to me as it was my first trip to P.E.I.

The first Board meeting, which started at 9 a.m. on Friday, was held in the Agricultural Research and Extension Building. Mrs. Ellen McLean, President of the Federated Women's Institutes of Canada, welcomed the members, and Mrs. Marion Alexander was appointed recording secretary. Each member of the Board stood in turn and introduced herself. The Roll Call "Program and Project Suggestions for the Next Triennium — Your Priority" brought out several suggestions. The minutes of the last Board meeting, December 5, 1975, were accepted. The minutes of the Executive meeting held June 17, 1976 were read. Mrs. Ruth Jamieson's resignation was read as was that of the Editor of the Federated News, Mrs. Wilson, who is re-signing owing to ill health. These resignations were later accepted with regret, and it was decided to award Mrs. Wilson an honorary membership in FWIC. There are about 100 copies of Heritage of Canadian Handicrafts left, these to be held mostly for individual orders. It was decided that the provinces up-date their slides by March 1977.

Mrs. McLean welcomed to the convention, to P.E.I., and to Canada our World President, Mrs. Olive Farquharson. She paid tribute to Mrs. Neal Burden, elected 3rd. Vice President at Banff Convention, who passed away on May 30, 1975.

Mrs. McLean expressed her thanks to Mrs. Marion Alexander, Director-at-Large, for her willingness to complete the triennium as Convener of Home Economics and Health for Mrs. R. Grierson, who resigned early in 1975 owing to home responsibilities. The revision of the By-Laws will be ratified at the first plenary session of this convention and there will no longer be standing committees or directors-at-large. The work will continue with the responsibilities assigned to Vice-Presidents. Each province will now have the same number of votes.

Finances: Gratitude was expressed to the Canada Department of Agriculture for receipt of the annual grant of $10,000. The usual grant of $10,000 to assist in our work in the North will be reduced to $5,000 for 1976, due to restraints and cut-backs. A grant of $3,487 towards maintenance of the Adelaide Hoodless Homestead was awarded by the Historical and Museums Branch, Ontario Ministry of Culture and Recreation. The Nutrition/Education program was successful, with some provinces doing an outstanding job.

Resolutions: Resolutions sustained at the 1975 Board meeting were sent to the various Government Departments; receipt was acknowledged by some. However, follow-up will have to be made on a continuous basis to assure that action is taken. Mrs. McLean said that she is becoming more and more convinced that letters by the hundreds sent to the Prime Minister, Cabinet Ministers, and Members of Parliament by our WI members on issues of current concern would be more effective than any number of resolutions, particularly when there is a lapse of a year before there is a follow-up. Certainly we are far from having all the recommendations of The Royal Commission on the Status of Women implemented. This means that we should continually press the Government for action. If nagging becomes necessary, then let's nag. The same holds true in our Provinces — action only comes about if we keep prodding.

Mrs. McLean reported on three very busy but memorable years. She closed her report saying "Ours is an organization with a tremendous potential. Facing our challenges head on and squarely is the challenge I leave with you. Just as it is of the utmost importance to us as a nation that we be a unified one, this is equally true with our organization. The challenges to us are numerous. We as women will, I know, respond to these challenges. We went to maintain a quality of life within our families, our communities, our country and extend it throughout the world. What happens to the quality of

life we cherish? What happens to the quality of our organization? That is up to us."

Report of National Office: Mrs. Ruth Jamieson reported a busy year. One provincial paper had reproduced the UNESCO Coupon 569 pamphlet, which she would recommend, as enough copies cannot be supplied to all who ask for them. She said that much information could be passed along through our papers, ACWW to FWIC to Units. The date for subscriptions to the Federated News has changed to December 1. Deadlines for news are February 15, May 15, August 15 and November 15. Anyone may send in articles. Total FWIC membership is 54,080, with 2,680 branches reported by provincial units. Although only two units showed increases for the three-year period, it was interesting and encouraging to note that five units showed increases for the past year, as follows: B.C. 73; Alberta 44; Saskatchewan 181; Quebec 5, and N.S. 50. The province that won the three-year percentage increase competition has an increase of eight per cent. This was the fifth Triennial Convention that Mrs. Jamieson worked on; she started in the National Office in 1963 and helped Mrs. Taylor get ready for the 1964 Convention in Wolfville, N.S.

Mrs. Fulton sends a report to ACWW every three months. She said that permission was granted to use the slides "Meet the Provinces" at ACWW Council. Mrs. Fulton thanked the provinces who helped with her expenses as Area Vice-President. After some discussion it was decided that FWIC give an annual grant to the Area Vice-President of ACWW of $500 and that each province include $25 yearly in their annual returns to FWIC National Office. Mrs. Fulton is to be reimbursed $325 for 1974-75.

Conveners' Reports: Agriculture Convener, Mrs. Isabel Price, stressed the importance of sending in provincial reports. She made the suggestion that to commemorate the U.S. Bicentennial year and also to remember the Grace E. Frysinger Exchange visits, FWIC donate one dozen Hoodless rose bushes to be planted in the International Peace Garden. This suggestion was sustained later.

Citizenship and Education Convener, Mrs. Poole, suggested that we wear our pins and that Provincial units have ACWW badges available at conventions. They sell for 50 cents.

Cultural Activities: Mrs. Anderson said one definition of handicrafts was "an occupation of art calling for skillful use of the hands." She added that cultural activities should enrich our lives and give enjoyment to all.

Home Economics and Health: Mrs. Alexander stressed the need for good family life, understanding, and the ability to cope with tension. "Homemakers, we have a great responsibility," she said.

United Nations and International Exchange: Mrs. White said that most branches contribute to Pennies for Friendship, knowing that they are the life line of ACWW, but one provincial convener said, "Only 50 WIs (out of 183) reported donating Pennies for Friendship." Presidents, local and provincial, should emphasize just what these pennies do. One lady gave a penny a day for each day of sunshine in 1975 — $2.68. (I was thrilled when Mrs. Farquharson came to me after the "Meet the Provinces" Tuesday evening and congratulated me on our part and asked me to thank the members of my province for their generous donation to Pennies for Friendship. She said that on a per capita basis we gave the highest amount in Canada.)

Resolutions: Mrs. Margaret Zoeller, chairman. The following resolutions were sustained: (1) That we suggest the establishment of centres for victims of rape and urge that victims be allowed privacy during investigations and trials; (2) That school curriculums contain a common form of basic skills throughout Canada; (3) That we protest to television authorities and the Canadian Government programming featuring violence, rape, and crime and suggest that these be replaced with programs of an educational, cultural, and informative nature; (4) That we support James McGrath, M.P. for St. John's East, P.E.I. and Judy LaMarsh, Chairman of Commission, re amendments to the Broadcasting Act; also that we write individual letters to our federal members of Parliament, to sponsors, as well as TV stations, protesting use of violence and pervert use of sex in TV programming, and (5) That we petition the Federal Government to pass legislation making the Maple Leaf tartan the official tartan of Canada.

Members of the board worked in the different residences registering the delegates. Both Mrs. Coates and I worked on Saturday evening, Sunday afternoon, and Tuesday morning.

Board members were invited by His Honour Lieutenant Governor Gordon L. Bennett and Mrs. Bennett to a reception at Government House on Saturday at 4:30 p.m. We were graciously received and given a tour of the lovely residence. Then we were invited to a buffet supper as the guests of the P.E.I. 1976 Convention Committee and Provincial Board at Oyster Bed Farm — the home of Mr. and Mrs. Matheson. This was also a delightful spot and we all enjoyed the surroundings and delicious food.

Sunday morning was beautiful and sunny, if a bit hot. Mrs. Coates'

daughter and son-in-law helped us move to the University Campus and then asked us out to enjoy a picnic lunch at the Strathgartney Homestead. It was lovely, but we both had to be back for duty at 2:00 p.m.

The official opening of the 7th National Convention took place in The Confederation Centre of the Arts on Sunday evening. Mrs. McLean, presided and opened with O Canada, Mary Stewart Collect and a Memorial Silence, followed by the reading of a message from Her Majesty the Queen and God Save the Queen. Greetings from Honourable Catherine Collbeck on behalf of the Government of P.E.I. and greetings by way of a telegram from the Federal Minister of Agriculture, Honourable Eugene Whelan, were read and Mrs. E. V. Fulton, Area Vice-President ACWW, Mrs. K. McLean, President, P.E.I. Women's Institutes extended warm greetings to all. Mrs. M. Zoeller replied to the welcome.

Mrs. McLean gave a wonderful address, enjoyed by over 1,000 WI members and friends. In conclusion Mrs. McLean said that the Women's Institutes need unity and strength to face the many challenges facing the members. "Working together to achieve oneness and unity will give us the strength to achieve our aims and objectives."

We enjoyed selections by The Confederation Centre Boys Choir which were followed by the presentation of the Tweedsmuir trophies: Handicraft, a pieced quilt, went to Pittsburg WI, Ontario, honourable mention to Alora WI, Ontario; and to the Irishtown WI, P.E.I. Cultural Activity: a play, went to Edmonton WI, Alberta, honourable mention to Stanhope WI, P.E.I., and Hemmingford WI, Quebec. Tweedsmuir trophy for best community history was awarded to Dougall WI, Manitoba and honourable mention to Victoria WI, P.E.I., and Deerfield WI, Nova Scotia. The Senator Cairine Wilson Citizenship Trophy was won by St. John's WI, Newfoundland. (This was the 20 slides accompanied by tapes.) The FWIC Membership Trophy was presented to Nova Scotia WI for the largest increase percentage wise in membership during the triennium.

Mrs. Olive Farquharson, O.B.E., President of the Associated Country Women of the World, was the keynote speaker. Mrs. Farquharson, who represents some eight million women in her organization, 290 societies in over 70 different countries, said each and every individual in the world has the power to hinder or develop some aspect of world development and that Women's Institutes must become the informed groups in the community and aid in the development of National policies. She asked for our continued support of the Nutrition/Education Fund. In conclusion the guest speaker commended the FWIC in their fine work over the years noting, "Unity in service gives unity in strength and working together on an international basis strengthens the cause."

We all enjoyed the reception which followed; it gave us all a chance to renew acquaintances and make new friends.

Our Monday session opened with a Singspiration and then a Welcome to the University of P.E.I.

Regrets at not being present and greetings were read from several Past Presidents and greetings in person came from Mrs. Florence Matheson, P.E.I. Mrs. Fulton moved a vote of thanks to our National President, Mrs. McLean for her speech. Mrs. McLean was given a standing ovation. Mrs. Fulton gave the report of the By-Laws Committee and asked for the ratification of the convention of these revised by-laws that were passed at a special board meeting, December 5, 1975. This was granted.

We were entertained at a luncheon by the City of Charlottetown. The mayor and Mrs. Frank Zakem were present. Mr. Zakem welcomed us to the City and extended best wishes. Grade five and six pupils of Parkdale School danced and sang for us. Mrs. George Clarke, Past President FWIC, brought greetings in person and told something of her work during the years.

Mrs. Frank Ross, Chairman of the Tweedsmuir Committee, gave her report. Speaking especially of the plays, she reported that the judge said there was a lack of action, they needed more attention but that it was a good project. They felt that each province must have someone to give instructions. She concluded with "Go back; work on it; it could be worthwhile." Mr. Scott Robson, Curator, Quilts, Department of Education, spoke and showed interesting slides. One quilt had 5,750 one-inch squares and was pieced and made up about 1890.

The Conveners' Presentation "The House of Nutrition", chaired by Mrs. Fulton, was very thought provoking. Each convener reported.

Tuesday afternoon was devoted to Workshop Discussions and we were divided into groups. (1) Land Use; (2) Strengthening the Family Unit; (3) Our Heritage; (4) The Role of Women; (5) Rural-Urban Communications; (6) Man and Resources; (7) New Directions. Wednesday afternoon each group chairman gave a report of the findings.

Tuesday evening — Meet the Provinces: This was all done on tape with accompanying slides. The Presidents were called to the platform before Mrs. Zoeller,

Miss Smith, seen here admiring some of the 144 gifts on display at the QWI Convention, reports that proceeds from the PEI gift stall were $2,150.

who chaired the program, started the tape. Following this the winning play was put on by local talent, this was very well done and enjoyed by all.

Wednesday was P.E.I. Day with tours. Each bus load was entertained by one of the hostess groups to luncheon and a short entertainment. In the evening we attended a preview put on for FWIC in the Confederation Centre of "Anne of Green Gables."

Thursday morning Mrs. Beilish, reporting on Northern Canada Women's Institutes, told us that parcels could be sent to Care-centres and should contain crayons and paper; for the women — kerchiefs and necklaces, large pieces of material, wool for knitting and articles to give senior citizens as prizes. Used clothing MAY NOT be sent. Parcels should be sent to the Secretary (or President) Aklavik WI, Aklavik, N.W.T., or Mrs. Mary Firth, Fort McPherson WI, Fort McPherson N.W.T. Another project could be a scrap or picture book of WI activities and the countryside — not much reading. These could be used in hospitals. Any branch wishing to help the work in the North may subscribe to the N.C.W.I. Magazine by writing: Adult Education, Department of Education, Government of N.W.T., Yellowknife, N.W.T.

A telegram of regret at not being able to be present was read from Mrs. Olive Thompson, representative to the Peace Garden. In her report she said that the ever-increasing number of visitors was gratifying — the vehicle count for 1975 was 103,000.

It was decided that each province take word back that the position of Secretary-Treasurer is vacant and that applications will be accepted up to September 15 and any suggestions to fill the vacancy of Editor of Federated News be sent to Mrs. Joseph Beilish, our new President, who is from Alberta and was the 2nd Vice President of FWIC.

Mrs. W. L. Oddie of Saskatchewan was elected by ballot as President Elect. Mrs. Oddie is well known to many. She has worked in different capacities; her more recent work was on the By-Laws Committee.

Pennies for Friendship amounting to $180 were collected at the door and the proceeds of the gift stall were $2,150.

Gifts of appreciation were presented to Mrs. McLean and Mrs. Jamieson and the new officers welcomed. Mrs. Beilish thanked all who had made the convention a success and said that the delegates and membership make the convention. She reported 500 registered at Convention and 135 daily visitors. (Twenty-two members were present from Quebec and a bus load of visitors came from the Gaspé.) The convention was declared closed Thursday afternoon.

Thursday evening we were invited by the P.E.I. Department of Agriculture and Forestry to a reception in Memorial Hall followed by a Banquet at Confederation Centre. Father F.W.P. Bolger, head of the History Department at UPEI, was the guest speaker. He spoke of the "Times and Life of Lucy Maud Montgomery." Dr. Bolger was thanked by Mrs. Ellen McLean, Past President of FWIC. The Honourable A. E. Ings, Minister of Agriculture, welcomed us and said that the provincial government was proud to be the host of the banquet. Dr. Ings said that the work of the Women's Institute was vitally important to progress in Canada. "The Women's Institute is the backbone of rural society. In P.E.I. their community responsibility is second to none," said Dr. Ings.

The final evening was a wonderful climax to a profitable and enjoyable 10 days. Many thanks to all who made it possible. On Friday morning a post Board meeting was held at which the new Vice-Presidents for the different provinces assumed their position on the Executive of FWIC. Mrs. James Robertson from Quebec Province was appointed recording secretary. The next Triennial FWIC Convention is to be held in Saskatchewan in 1979.

I returned home Saturday on schedule, after some doubts about there being any flights out of P.E.I.

Miss Edna L. Smith
President
Quebec Women's Institutes

Correction

In the May issue we said that Mrs. McBain, who had won in the handicraft competitions at the 1975 Convention, lives in Matagami. That should have read Valcartier.

Please Note:

The correct address for mail being sent to QWI President, Miss

Edna L. Smith is: Box 105, Lennoxville, P.Q. JIM 1Z3. Some mail has been sent incorrectly addressed, thus causing some confusion at the Post Office.

Dear WI Members:

From the reports that have come in, and from reading local newspapers, it is evident that the majority of members have heard from their Convention delegates. All felt that it had been an enjoyable and a challenging experience — two or three days very well spent.

Handibags have been filled and sent in to Canadian Save the Children Fund. The Publicity Convener for Argenteuil County stated that 80 per cent of these bags are contributed by Women's Institute groups. Donations to Pennies for Friendship have been generous. Branches sent gifts to FWIC.

Valcartier mailed a box of knitted articles to CanSave. The same can be said for **Shipton** Branch in Richmond County. With proceeds from a tea and sale, **Rawdon** Branch sent Christmas parcels to children in Grise Ford, N.W.T. and in Nain, Labrador.

In Bonaventure County, five new members joined **Matapedia** Branch and two members were welcomed in **Marcil. Stanbridge East** added three new members. In **Argenteuil** County three new members joined our ranks with **Upper Lachute East End** Institute reporting their membership as 45.

Here is an interesting note from **Valcartier.** At the June meeting they planned a Dominion Day dance, featuring modern and traditional music. The members of the orchestra are of Indian origin and live on the Huron reserve not very far from Quebec City.

At the 63rd annual convention of **Pontiac** County Dr. Earle Potvin spoke on the history of the local hospital and stressed how important it was that people realized that the hospital was, as he said, "Our hospital." He explained the need for the present campaign for funds and the great need for laboratory equipment. Sherbrooke Hospital received donations from **Cleveland, Kinnear's Mills** and **Austin** Branches. **Fordyce** Branch, Mississquoi County, had an article read about the founder of the first cheese factory in Canada. This was at Farnham Centre — only three short miles from Fordyce. Another article read at the same meeting was entitled "The Year Without a Summer — 1816". It proved to be very interesting. The winter and fall months had been very warm, whereas June, July, and August were extremely cold with snow and high winds. Many believed this to be the end of the world. As this was an agricultural program, these articles must have been very timely!

Grenville entertained **Pioneer** Branch and made plans for a centennial dinner. Proceeds were to go to a new community centre, so the ladies hoped all citizens would co-operate. **Brownsburg** WI celebrated their 50th anniversary by enjoying a turkey dinner at Chateau Montebello. Mrs. M. Low was presented with a mohair blanket. Mrs. G. Seary, Charter Member, was presented with a 50-year pin. Spring and summer banquets seem the order of the day. Ladies from **Matagami** Branch celebrated at the Matagami Hotel.

Clarendon Branch presented 25-year pins to Mrs. Arthur Dagg, Mrs. Gerald Draper, and Mrs. Arthur Kilgour. This from Pontiac County.

Ascot Branch, Sherbrooke County, served supper to residents of Grace Christian Home, Huntingville. A musical program had been arranged. Among the items were accordian solos played exceptionally well by an eight-year-old girl. When tunes were familiar, listeners joined in with the chorus. The senior citizens were presented with small gifts from the Institute members. Also from the same county members travelled to the Wales Home, Richmond, to visit Miss Beulah Page to help her celebrate her 83rd birthday. In the usual hospitable fashion of the Home, the guests were royally welcomed, and an enjoyable time was spent.

I want to mention **Matagami** again. The ladies here organized a "Garbage Day" with the help of the young people. The downtown area was cleaned of refuse and litter. When this was finished they gathered at the Legion Hall and the WI ladies served refreshments. This branch also obtained luminescent tape for children's bicycles in the area. This surely is a commendable preventative measure.

From **West Island** Branch we learn the following: Mr. F. A. Homonnay, of Awatto International Health Foods, was guest speaker at a meeting. His topic was "Allergies, Asthma and Hay Fever". Two West Island members attended CanSave National Convention held in Montreal. This must have been interesting. The WI supports CanSave generously.

There were many interesting and educational roll calls. **Granby Hill:** Give an example of when a friend helped you when you were in need. **Granby West:** Model an old piece of clothing.

I appreciate the fact that the reports came in so promptly. Here are two or three mottos I would like to repeat: The doors of wisdom are never closed; To give your time can often be a generous thing to do; and Life asks women to give and give, and then to give up, and to do both with equanimity and courage.

Mrs. Gladys C. Nugent
QWI Publicity Convener

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